

**Notice of Allowability**

Application No.

09/808,469

Applicant(s)

WARNES, PETER

Examiner

Mary J. Steelman

Art Unit

2191

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/07/2005.
2. ☒ The allowed claim(s) is/are 1-7, 20-24, 26-50 (renumbered in order 1-37).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

### **DETAILED ACTION**

1. This Office Action is in response to Amendments and Remarks received 7 December 2005. Per Applicant's request, claims 8-19 and 25 have been canceled. Claims 46-50 have been added. Claims 1, 20, 26, 32, 34, 35, 40, 42, and 43 have been amended. Claims 1-7, 20-24, and 26-50 are pending.

#### ***Allowable Subject Matter***

2. Claims 1-7, 20-24, and 26-50 (to be renumbered in order 1- 37) are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, as Applicant has pointed out on page 13, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs of Remarks, Killian (USPN 6477683) and other cited prior arts, taken alone or in combination, fail to disclose the following combination of limitations:

“providing a program having a plurality of different instruction types, individual ones of said instruction types being included within at least one of 16-bit and 32-bit instruction words...creating a compressed instruction set encoding to generate a compressed instruction set based at least in part on said act of determining wherein said act of creating a compressed instruction set comprises creating at least one compressed 14-bit instruction disposed within one of said 16-bit or 32 bit words.”

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Regarding independent claims 20, 26, 35, and 42, as Applicant has pointed out on page 14, 2<sup>nd</sup> and 4<sup>th</sup> paragraphs, of Remarks, Killian (USPN 6,477,683) and other cited prior arts, taken alone or in combination, fail to disclose the following:

“wherein said pipeline is operative to utilize said optimized instruction set without instruction translation.” (Similarly worded in claims 26 and 42.)

As noted in Remarks, page 14, 2<sup>nd</sup> paragraph, the Specification discusses the prior art deficiency related to the need for translation logic when using 16-bit and 32-bit instructions.

Regarding independent claim 32, as Applicant has pointed out on page 15, last two paragraphs, Killian (USPN 6,477,683) and other cited prior arts, taken alone or in combination, fail to disclose the following limitations when taken with all other cited limitations:

“wherein any immediate data fields in said compressed instruction set start from the least significant bit of respective ones of said instructions; and wherein a plurality of instructions from said compressed instruction set each have at least one source register field located in common location therein.”

Regarding independent claim 34, as Applicant has pointed out on page 16, first two paragraphs, Killian (USPN 6,477,683) and other cited prior arts, taken alone or in combination, fail to disclose the following limitations when taken with all other cited limitations:

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“wherein only a subset of available registers, and implied registers, are used by said compressed instruction set, said subset and implied registers reducing the number of bits required to encode a register.”

Regarding independent claim 40, as Applicant has pointed out on page 15, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs, of Remarks, Killian (USPN 6,477,683) and other cited prior arts, taken alone or in combination, fail to disclose the following:

“wherein a majority of instruction opcodes are encoded within the top n bits, n being an integer greater than 1, said top n bits determining the format of the remaining bits within an instruction associated therewith.”

Regarding newly added independent claims, claims 48 and 49, Applicant has claimed very specifically defined instructions sets to run on a RISC processor core. Cited prior arts, taken alone or in combination fail to disclose the combination of:

Per claim 48:

“a multi-bit offset, 14-bit conditional branch instruction; a register-register multi-use opcode 14-bit instruction; a single source register opcode 14-bit instruction; an implied register opcode 14-bit instruction; a multi-bit offset, 14-bit Load instruction; a multi-bit offset, 14-bit Store instruction;

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a multi-bit offset, 14-bit LOAD/STORE instruction; a multi-bit integer, 14-bit MOVE/COMPARE instruction; and a multi-bit integer, 14-bit ADD instruction.”

Per claim 49:

“a multi-bit signed offset conditional branch, 15-bit instruction; a multi-bit register-register multi-use opcode instruction; a multi-bit single source register opcode instruction; a multi-bit implied opcode instruction; a multi-bit offset, 15-bit LOAD instruction; a multi-bit offset, 15-bit STORE instruction; a multi-bit offset, 15-bit LOAD/STORE instruction; a multi-bit integer, 15-bit MOV/CMP instruction;

Thus, all remaining dependent claims, claims 2-7, 21-24, 27-31, 33, 36-39, 41, 43-47 and 50 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

#### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (571) 272-3704. The

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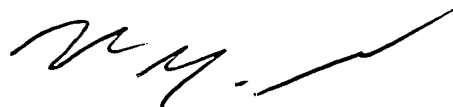
examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached at (571) 272-3708. The fax phone number for the organization where this application or proceeding is assigned: 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mary Steelman

02/02/2006



WEI ZHEN  
SUPERVISORY PATENT EXAMINER